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A SYSTEM APPROACH TO NAVY MEDICAL EDUCATION AND TRAINING. APPENDIX C

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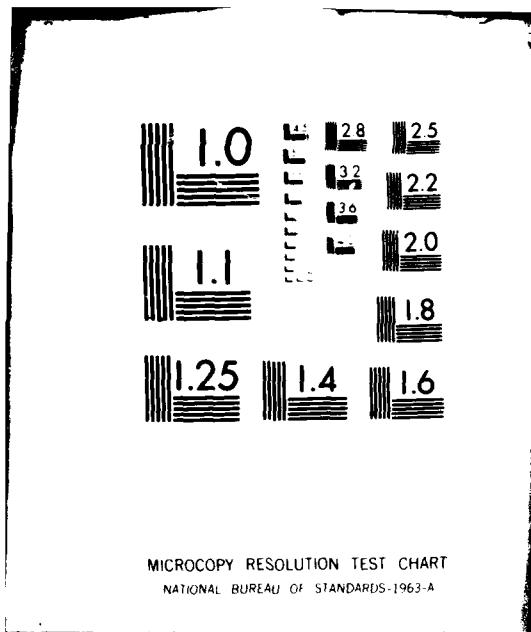
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APPENDIX 45.

COMPETENCY CURRICULA FOR  
DENTAL PROSTHETIC ASSISTANT  
AND  
DENTAL PROSTHETIC TECHNICIAN

APPLICATION OF A SYSTEM APPROACH  
U.S. NAVY MEDICAL DEPARTMENT  
EDUCATION AND TRAINING PROGRAMS  
FINAL REPORT

AUGUST 31, 1974

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OFFICE OF NAVAL RESEARCH  
U.S. DEPARTMENT OF THE NAVY

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Bureau of Medicine and Surgery (Code 71G)

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currently designated Navy enlisted occupations, 20 Naval Enlisted Classification Codes (NEC's) were computerized. A set of 16 groupings that cover all designated occupations was developed so as to enhance the effectiveness of professionals and sub-professionals alike.

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## FOREWORD

The project, "Application of a System Approach to the Navy Medical Department Education and Training Programs," was initiated in May of 1969 as a realistic, comprehensive response to certain objectives set forth in ADO 43-03X, and to memoranda from both the Secretary of Defense and the Assistant Secretary of Defense, Manpower and Reserve Affairs. The Secretary's concern was stated in his memorandum of 29 June 1965, "Innovation in Defense Training and Education." More specific concerns were stated in the Assistant Secretary's memorandum of 14 June 1968, "Application of a System Approach in the Development and Management of Training Courses." In this he called for "vigorous and imaginative effort," and an approach "characterized by an organized training program with precise goals and defined operational interrelation among instructional system components." He also noted, "Job analyses with task descriptions expressed in behavioristic terms are basic and essential to the development of precise training goals and learning objectives."

### The Project

System survey and analysis was conducted relative to all factors affecting education and training programs. Subsequently, a job-analysis sub-system was defined and developed incorporating a series of task inventories "...expressed in behavioristic terms..." These inventories enabled the gathering of job activity data from enlisted job incumbents, and data relating to task sharing and delegation from officers of the Medical, Nurse and Dental Corps. A data management sub-system was devised to process incumbent data, then carry out needed analyses. The development of initial competency curricula based upon job analysis was implemented to a level of methodology determination. These methods and curriculum materials constituted a third (instructional) sub-system.

Thus, as originally proposed, a system capability has been developed in fulfillment of expressed need. The system, however, remains untested and unevaluated. ADO 43-03X called for feasibility tests and cost-effectiveness determination. The project was designed to so comply. Test and evaluation through the process of implementation has not proved feasible in the Navy Medical Department within the duration of the project. As designed and developed the system does have "...precise goals and defined operational interrelation among instructional system components." The latter has been achieved in terms of a recommended career structure affording productive, rewarding manpower utilization which bridges manpower training and health care delivery functions.

### Data Management Sub-System

Job analysis, involving the application of comprehensive task inventories to thousands of job incumbents, generates many millions of discrete bits of response data. They can be processed and manipulated only by high speed computer capability using rigorously designed specialty programs. In addition to numerical data base handling, there is the problem of rapidly and accurately manipulating a task statement data base exceeding ten thousand carefully phrased behavioral statements. Through the use of special programs, task inventories are prepared, printouts for special purposes are created following a job analysis application, access and retrieval of both data and tasks are efficiently and accurately carried out, and special data analyses conducted. The collective programs, techniques and procedures comprising this sub-system are referred to as the Navy Occupational Data Analysis Language (NODAL).

### Job Analysis Sub-System

Some twenty task inventory booklets (and associated response booklets) were the instruments used to obtain job incumbent response data for more than fifty occupations. An inventory booklet contains instructions, formatted questions concerning respondent information ("bio-data"), response dimension definitions, and a list of tasks which may vary in number from a few hundred to more than a thousand per occupational field.

By applying NODAL and its associated indexing techniques, it is possible to assemble modified or completely different inventories than those used in this research. Present inventories were applied about three years ago. While they have been rendered in operational format, they should not be re-applied until their task content is updated.

Response booklets were designed in OPSCAN mode for ease of recording and processing responses.

Overall job analysis objectives and a plan of administration were established prior to inventory preparation, including the setting of provisional sample target sizes. Since overall data attrition was forecast to approximate twenty percent, final sample and sub-sample sizes were adjusted accordingly. Stratified random sampling techniques were used. Variables selected (such as rating, NEC, environment) determined stratifications, together with sub-population sizes. About fifteen percent of large sub-populations were sought while a majority or all members of small sub-populations were sought.

Administration procedures were established with great care for every step of the data collecting process, and were coordinated with sampling and data analysis plans. Once set, the procedures were formalized as a protocol and followed rigorously.

#### Instructional Sub-System

Partial "competency curricula" have been composed as an integral sub-system bridging what is required as performance on the job with what is, accordingly, necessary instruction in the training process. Further, curriculum materials were developed to meet essential requirements for implementing the system so that the system could be tested and evaluated for cost effectiveness. However, due to the fact that test and evaluation was not feasible in the Navy Medical Department within the duration of the project, it was not possible to complete the development of the system through the test and evaluation phase. The inability to complete this phase also interrupted the planned process for fully developing the curricula; therefore, instead of completed curricula ready for use in the system, the curricula were partially developed to establish the necessary sub-system methodology. The competency curricula are based on tasks currently performed by job incumbents in 1971. (The currency of a given curriculum depends upon periodic analysis of incumbents' jobs, and its quality control resides in the evaluation of the performance competency of the program's graduates.)

A competency curriculum provides a planned course of instruction or training program made up of sequenced competency units which are, in turn, comprised of sequenced modules. These modules, emphasizing performance objectives, are the foundation of the curriculum.

A complete module would be comprised of seven parts: a cluster of related tasks; a performance objective; a list of knowledges and skills implied by the objective; a list of instructional strategies for presenting the knowledges and skills to the learner; an inventory of training aids for supporting the instructional strategies; a list of examination modes; and a statement of the required training time. In this project, curriculum materials have been developed to various levels of adequacy, and usually comprise only the first three parts; the latter four need to be prepared by the user.

The performance objective, which is the most crucial part of the module, is the basis for determining curriculum content. It is composed of five essential elements: the stimulus which initiates the behavior; the behavior; the conditions under which the behavior takes place; the criteria for evaluating the behavior; and the consequence or results of the behavior. A sixth element, namely next action, is not essential; however, it is intended to provide linkage for the next behavior.

Knowledges and skills listed in the module are those needed by the learner for meeting the requirements of the performance objective.

Instructional strategies, training aids, examination modes and training time have been specified only for the Basic Hospital Corps Curriculum. The strategies, aids and modes were selected on the basis of those considered to be most supportive in presenting the knowledges and skills so as to provide optimum learning effectiveness and training efficiency. The strategies extend from the classroom lecture as traditionally presented by a teacher to the more sophisticated mediated program for self-instruction. The training aids, like strategies, extend from the traditional references and handout material in the form of a student syllabus to mediated programs for self-instruction supported by anatomical models. Examination modes extend from the traditional paper and pencil tests to proficiency evaluation of program graduates on the job, commonly known as feedback. Feedback is essential for determining learning effectiveness and for quality control of a training program. The kind of instructional strategies, training aids and examination modes utilized for training are limited only by such factors as staff capability and training budget.

The training time specified in the Basic Hospital Corps Curriculum is estimated, based upon essential knowledge and skills and program sequence.

The competency curriculum module, when complete, provides all of the requirements for training a learner to perform the tasks set forth in the module. A module may be used independently or related modules may be re-sequenced into modified competency units to provide training for a specific job segment.

Since the curricula are based upon tasks performed by job incumbents in 1971, current analysis of jobs needs to be accomplished using task inventories that have been updated to reflect changes in performed tasks. Subsequent to job analysis, a revision of the curricula should be accomplished to reflect task changes. When the foregoing are accomplished, then faculty and other staff members may be indoctrinated to the competency curricula and to their relationship to the education and training system.

In addition to the primary use for the systematic training of job incumbents, these curricula may be used to plan for new training programs, develop new curricula, and revise existing curricula; develop or modify performance standards; develop or modify proficiency examinations; define billets; credentialize training programs; counsel on careers; select students; and identify and select faculty.

### The System

Three sub-systems, as described, comprise the proposed system for Education and Training Programs in The Navy Medical Department. This exploratory and advanced developmental research has established an overall methodology for improved education and training incorporating every possible means of providing bases for demonstrating feasibility and cost effectiveness. There remains only job analysis sub-system updating, instructional sub-system completion, and full system test and evaluation.

### Acknowledgements

The authors wish to acknowledge the invaluable participation of the several thousands of Naval personnel who served as respondents in inventory application. The many military and civilian personnel who contributed to developmental efforts are cited by name in the Final Report.

The authors also wish to acknowledge former colleagues for singularly important contributions, namely, Elias H. Porter, Ph.D., Carole K. Kauffman, R.N., M.P.H., Mary Kay Munday, B.S.N., R.N., Gail Zarren, M.S.W., and Renee Schick, B.A.

Identity and acknowledgement of the project Advisory Group during the project's final year is recorded in the Final Report.

Lastly, the project could not have been commenced nor carried out without the vision, guidance and outstanding direction of Ouida C. Upchurch, Capt., NC, USN, Project Manager.

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DENTAL PROSTHETIC ASSISTANT  
AND  
DENTAL PROSTHETIC TECHNICIAN

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DENTAL PROSTHETIC TECHNICIAN

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**DENTAL PROSTHETICS**

**ASSISTANT**

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT I: INTERPRETATION OF DENTAL LAB (PROSTHETIC)  
WORK AUTHORIZATION

This unit includes the following Module:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Interpret Work Authorization . . . . .	2

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Work Authorization

MODULE 1: INTERPRET WORK AUTHORIZATION

**TASKS**            a. Interpret work authorization  
                      b. Assign work to personnel

**PERFORMANCE OBJECTIVE**

(Stimulus)        When a completed work authorization (NAVMED 952) is received from the dentist  
(Behavior)        The DPA will properly interpret the work authorization form and assign the procedure to the appropriate personnel  
(Conditions)      With supervision  
(Criteria)        Accurate interpretation of the work authorization  
(Consequence)     This action will result in appropriate delegation of work to be done  
(Next Action)      Perform the tasks specified in the work authorization

**KNOWLEDGES AND SKILLS**

Recognition/identification of anatomic landmarks of oral cavity  
Number, location and surfaces of teeth  
Dental terminology  
Recognition/identification of various types of dental prostheses

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT II: CAST CONSTRUCTION

This unit includes the following Module:

<u>Number</u>	<u>Title</u>	<u>Page</u>
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Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Cast Construction

MODULE 1: POURING IMPRESSIONS AND FORMING CASTS

TASKS

- a. Remove saliva and debris
- b. Bead and box impression
- c. Mix gypsum material
- d. Pour impressions
- e. Trim stone casts to suitable size and shape

PERFORMANCE OBJECTIVE

(Stimulus) Upon receipt of the impression with the dentist's work authorization

(Behavior) The DPA will prepare the impression and pour the specified dental cast

(Conditions) Without supervision; using appropriate dental equipment, instruments and materials

(Criteria) The cast must be bubble free, dense, complete and of adequate thickness

(Consequence) This will produce a reproduction of the oral tissues for further use in fabrication of the prosthesis

(Next Action) Depends upon intended use of casts

KNOWLEDGES AND SKILLS

Characteristics and manipulation of dental materials and equipment used

Accepted procedures used for production of various types of casts

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT III: CUSTOM IMPRESSION TRAYS

This unit includes the following Module:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Fabricate Custom Impression Trays . . . . .	6

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Custom Impression Trays

MODULE 1: FABRICATE CUSTOM IMPRESSION TRAYS (L.D.; R.P.D.; F.P.D.)

**TASKS**            a. Prepare preliminary casts  
                      b. Construct custom impression trays

**PERFORMANCE OBJECTIVE**

(Stimulus)        When so directed  
(Behavior)        The DPA will properly prepare the specified  
                      preliminary cast  
(Conditions)      Without supervision; using autopolymerizing  
                      acrylic resin or base pestle material  
(Criteria)        According to either accepted techniques or the  
                      dentist's work authorization; producing a rigid,  
                      accurate, smooth and properly trimmed tray  
(Consequence)     This produces a custom impression tray for use in  
                      making the final impression  
(Next Action)      Deliver it to the dentist's office

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of dental  
                      materials and equipment used  
Procedures for constructing various types of  
                      custom impression trays

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT IV: RECORD BASES AND OCCLUSION RIMS

This unit includes the following Module:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Fabricate Record Bases and Occlusion Rims . .	8

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Record Bases

MODULE 1: FABRICATE RECORD BASES AND OCCLUSION RIMS

**TASKS**

- a. Prepare master casts
- b. Construct record bases of resin, wax, shellac
- c. Fabricate occlusion rims

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of the master casts and when so directed  
(Behavior) The DPA will prepare master casts; fabricate record bases of various materials; and form and attach occlusion rims for complete and partial denture situations  
(Conditions) Without supervision  
(Criteria) The bases must be stable and accurate; the occlusion rims must be properly contoured and correctly positioned to substitute for the missing teeth and alveolar ridge  
(Consequence) This will produce a record base and occlusion rim  
(Next Action) Deliver the products to the dentist for use in recording occlusal relationships

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of the dental materials and equipment used  
Procedures for fabricating record bases and occlusion rims  
Oral anatomy, including a visualization of tooth position in relation to the edentulous areas of the cast

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT V: MOUNTING OF CASTS ON ARTICULATOR

This unit includes the following Module:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Mounting of Casts on Articulator . . . . .	10

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Mounting Casts

MODULE 1: MOUNTING OF CASTS ON ARTICULATOR

**TASKS**            a. Mount dentulous or partially edentulous casts  
                      b. Mount edentulous casts

**PERFORMANCE OBJECTIVE**

(Stimulus)        Upon receipt of casts and suitable records,  
                      and when so directed  
(Behavior)        The DPA will attach the casts to the articulator  
(Conditions)      Without supervision  
(Criteria)        In the relationship determined by the patient  
                      records  
(Consequence)     This will produce articulated casts  
(Next Action)      Return articulated casts to the dentist

**KNOWLEDGES AND SKILLS**

An understanding of the principles of various  
articulators, facebows, central bearing  
devices and extra- and intra-oral tracers  
Procedures and techniques for mounting casts on  
articulator as stated in Prosthetic Handbook  
(NavPers 10685-C)

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT VI: FABRICATION OF COMPLETE DENTURES

This unit includes the following Modules:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Arrange Artificial Teeth and Contour Trial Denture to Natural Contours . . . . .	12
2	Process Denture with Compression Molded Resin . . . . .	13
3	Process Denture with Fluid Resin (Hydro-colloid Mold) . . . . .	14
4	Process Denture with Fluid Resin (Gypsum Mold) . . . . .	15
5	Rearticulate Dentures and Correct Processing Errors by Occlusal Adjustment . . . . .	16
6	Fabricate Working Casts for Patient Rearticulation Procedure. . . . .	17

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fabricate Complete Dentures

MODULE 1: ARRANGE ARTIFICIAL TEETH AND CONTOUR TRIAL DENTURE TO NATURAL CONTOURS

TASKS

- a. Arrange artificial teeth in balanced occlusion
- b. Wax denture to natural contours

PERFORMANCE OBJECTIVE

(Stimulus)

Upon receipt of properly mounted casts

(Behavior)

The DPA will arrange the teeth in balanced occlusion and wax the denture to natural contours for the try-in appointment

(Conditions)

With minimal supervision

(Criteria)

Following the dentist's work authorization for shade, type and mold

(Next Action)

Return to dentist for try-in

KNOWLEDGES AND SKILLS

Identification of artificial teeth

Methods of arranging both cusped and monoplane artificial teeth

Principles of arranging teeth in balanced occlusion for standard and cross-bite situations

Elements and characteristics of dental esthetics

Procedures for contouring trial dentures to natural form

Characteristics and manipulation of dental materials and equipment used

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fabricate Complete Dentures

MODULE 2: PROCESS DENTURE WITH COMPRESSION MOLDED RESIN

**TASKS**

- a. Prepare cast and trial denture for flasking
- b. Flask trial denture
- c. Remove wax from mold
- d. Prepare mold for packing
- e. Pack mold with acrylic resin
- f. Process acrylic resin
- g. De-flask processed dentures

**PERFORMANCE OBJECTIVE**

(Stimulus) Following the try-in of the trial denture  
(Behavior) The DPA will complete any changes designated in accordance with the dentist's work authorization; prepare trial dentures for flasking; flask, boilout, pack, process and retrieve the denture

(Conditions) Without supervision; using appropriate laboratory instruments, equipment, and materials

(Criteria) In accordance with the dentist's work authorization; producing a denture that is accurate, dense, void of stone inclusions and free of excessive processing changes

(Next Action) Remount the dentures for removal of occlusal discrepancies inherent in processing procedures

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of dental materials and equipment used  
Standard procedures and techniques used in processing dentures with compression molding techniques

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fabricate Complete Dentures

MODULE 3: PROCESS DENTURE WITH FLUID RESIN (HYDROCOLLOID MOLD)

TASKS

- a. Prepare trial denture for hydrocolloid mold
- b. Make hydrocolloid molds for fluid resin denture
- c. Remove cast and denture from mold
- d. Mark artificial teeth for identification and remove
- e. Clean and prepare cast and teeth
- f. Sprue mold for fluid resin denture
- g. Replace teeth in mold
- h. Mix and pour fluid resin into mold
- i. Process fluid resin denture
- j. Retrieve denture

PERFORMANCE OBJECTIVE

(Stimulus) (Behavior)	Following the try-in of the trial denture The DPA will complete any changes designated in accordance with the dentist's work authorization, prepare trial denture for processing, and process
(Conditions) (Criteria)	Without supervision; using fluid resin equipment The denture must be accurate, dense, void of stone inclusions and free of excess processing changes
(Next Action)	Remount the dentures for removal of occlusal discrepancies inherent in processing procedures

KNOWLEDGES AND SKILLS

Characteristics and manipulation of dental materials and equipment used  
Standard procedures used in processing dentures with fluid resin

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fabricate Complete Dentures

MODULE 4: PROCESS DENTURE WITH FLUID RESIN (GYPSUM MOLD)

**TASKS**

- a. Prepare cast and trial denture for gypsum investment mold
- b. Attach cast with denture to flask base
- c. Attach wax sprues to trial denture base
- d. Form and secure flask collar
- e. Invest trial denture
- f. Remove flask collar and prepare cast and investment mold for wax elimination
- g. Remove cast from mold and prepare both for fluid resin
- h. Clean cast and mold
- i. Mix and pour fluid resin
- j. Prepare mold for process
- k. Process denture
- l. Retrieve denture

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon completion of try-in and when so directed  
(Behavior) The DPA will process the fluid resin denture utilizing gypsum-type specialized investment technique  
(Conditions) Without supervision  
(Criteria) The DPA will produce a denture that is of maximum accuracy and quality  
(Next Action) Rearticulate dentures and correct processing errors

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of dental materials and equipment used  
Fluid resin procedure using soluble gypsum investment

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fabricate Complete Dentures

MODULE 5: REARTICULATE DENTURES AND CORRECT PROCESSING ERROR  
BY OCCLUSAL ADJUSTMENT

TASKS

- a. Reattach casts to articulator mountings
- b. Reestablish vertical dimension and balanced occlusion by selective grinding

PERFORMANCE OBJECTIVE

(Stimulus) After deflasking the processed dentures  
(Behavior) The DPA will accurately reattach the casts to the articulator mountings and accomplish the selective grinding procedures required to reestablish the vertical dimension and restore balanced occlusion  
(Conditions) Without supervision  
(Next Action) Prepare a maxillary remounting index and separate dentures from the casts

KNOWLEDGES AND SKILLS

Selective grinding procedures  
Characteristics and manipulation of dental materials and equipment used

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fabricate Complete Dentures

MODULE 6: FABRICATE WORKING CASTS FOR PATIENT REARTICULATION PROCEDURE

**TASKS**

- a. Fabricate maxillary remounting index
- b. Retrieve dentures from casts
- c. Finish and polish dentures
- d. Block-out undercuts and construct casts for patient rearticulation procedure

**PERFORMANCE OBJECTIVE**

(Stimulus) Following selective grinding to reestablish vertical dimension and restore balanced occlusion

(Behavior) The DPA will fabricate a maxillary remounting index, separate the dentures undamaged from the casts, and finish and polish external denture base surfaces. After polishing, any undercuts on the tissue surfaces of the dentures will be blocked-out and new casts poured into the dentures

(Conditions) Without supervision

(Consequence) This will result in new casts, from which the dentures are easily removed

(Next Action) Deliver new casts to the dentist together with the finished dentures for final placement and adjustment procedures

**KNOWLEDGES AND SKILLS**

Patient rearticulation procedures  
Procedures and instrument manipulation for decasting, finishing and polishing dentures

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT VII: REPAIR, REBASE AND RELINE COMPLETE DENTURE

This unit includes the following Modules:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Rebase/Reline Complete Denture . . . . .	19
2	Repair Complete Denture . . . . .	20

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Rebase/Repair Denture

MODULE 1: REBASE/RELINING COMPLETE DENTURE

TASKS            a. Rebase denture  
                  b. Reline denture

PERFORMANCE OBJECTIVE

(Stimulus) Upon receipt of the denture with a reline impression and the dentist's work authorization  
(Behavior) The DPA will reline or rebase the denture  
(Conditions) Without supervision  
(Criteria) The relined/rebased denture must be accurate, dense, void of stone inclusions and free of excessive processing changes  
(Consequence) Relined or rebased denture  
(Next Action) Return the denture to the dentist for placement

KNOWLEDGES AND SKILLS

Procedures and manipulation of instruments for relining and rebasing dentures

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Rebase/Repair Denture

MODULE 2: REPAIR COMPLETE DENTURE

**TASKS**

- a. Repair fractured resin bases
- b. Replace missing or broken teeth
- c. Modify denture

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of a complete denture and work authorization

(Behavior) The DPA will repair fractured denture bases, replace missing or broken teeth or modify the dentures

(Conditions) Without supervision

(Criteria) The alteration must restore the denture to clinical acceptability

(Consequence) Repaired denture

(Next Action) Return dentures to dentist for placement

**KNOWLEDGES AND SKILLS**

Procedures for repair of resin bases, replacement of teeth and modification of dentures

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT VIII: FABRICATION OF IMMEDIATE DENTURES, INTERMEDIATE DENTURES AND SURGICAL TEMPLATES

This unit includes the following Modules:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Fabricate Immediate Denture . . . . .	22
2	Fabricate Intermediate Dentures . . . . .	23
3	Fabricate Surgical Template . . . . .	24

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fabricate Denture/Surgical Template

MODULE 1: FABRICATE IMMEDIATE DENTURE

**TASKS**

- a. Remove stone teeth from cast
- b. Replace stone teeth with artificial teeth

**PERFORMANCE OBJECTIVE**

(Stimulus) When casts articulated for immediate dentures are received together with a work authorization  
(Behavior) The DPA will remove the stone teeth from the casts and replace them with artificial teeth and complete the arrangement of the teeth  
(Conditions) With minimal supervision  
(Criteria) Either maintaining the exact position and appearance of the teeth or effecting improvements, as directed by the dentist  
(Consequence) Fabrication of an immediate denture  
(Next Action) Wax the dentures for processing

**KNOWLEDGES AND SKILLS**

Procedures for artificial tooth arrangement in immediate denture situations

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fabricate Denture/Surgical Template

MODULE 2: FABRICATE INTERMEDIATE DENTURES

**TASKS**

- a. Prepare cast for duplication
- b. Duplicate cast
- c. Pour teeth in self-curing resin
- d. Remove and trim resin teeth
- e. Replace resin teeth and pour remainder of cast
- f. Wax and contour denture base to natural form
- g. Process intermediate denture using compression molding or fluid resin technique

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of an impression or mounted casts and the dentist's work authorization

(Behavior) The DPA will fabricate intermediate dentures

(Conditions) Without supervision

(Criteria) The finished dentures must be dense and free of stone inclusions and must duplicate the existing dentition with modifications as directed by the work authorization

(Consequence) Fabrication of intermediate dentures

(Next Action) Deliver the dentures to the dentist

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of dental materials and equipment used

Procedures involved in fabrication of intermediate dentures

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fabricate Denture/Surgical Template

MODULE 3: FABRICATE SURGICAL TEMPLATE

**TASKS**

- a. Trim master cast
- b. Make a duplicate cast
- c. Construct a template by either vacuum forming or compression molding

**PERFORMANCE OBJECTIVE**

(Stimulus) When a surgical template is requested by the dentist

(Behavior) The DPA will trim and duplicate master cast and fabricate an accurate transparent resin base for use in the surgical procedures

(Conditions) With minimal supervision

(Criteria) The resultant template must be clear, free of stone inclusions and accurate

(Consequence) Specified surgical template for use in surgical procedures

(Next Action) Return the surgical template to the dentist

**KNOWLEDGES AND SKILLS**

Various methods for fabricating clear resin templates  
Procedures for making accurate duplicate casts

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT IX: FABRICATE APPLIANCES OTHER THAN  
COMPLETE/CAST PARTIAL DENTURES

This unit includes the following Module:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Fabricate Appliances Using Vacuum Precision Adaptor . . . . .	26

**Competency: DENTAL PROSTHETIC ASSISTANT (DPA)**

Unit: Fabricate Appliances

**MODULE 1: FABRICATE APPLIANCES USING VACUUM PRECISION ADAPTOR**

## **TASKS**

- a. Fabricate plastic/rubber appliances; e.g., impression trays, baseplates, periodontic appliances, plastic splints, surgical templates and protective mouth guards using vacuum precision adaptor

### PERFORMANCE OBJECTIVE

(Stimulus) When so directed  
(Behavior) The DPA will fabricate the specified type of  
clinically acceptable oral appliance  
(Conditions) Without supervision  
(Consequence) Specified type of oral appliance  
(Next Action) Return the appliance to the dentist

## KNOWLEDGES AND SKILLS

Types of appliances  
Characteristics and manipulation of dental  
materials used in fabricating appliances  
Proper procedures for operating vacuum precision  
adaptor

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT X: FABRICATION OF REMOVABLE PARTIAL DENTURES

This unit includes the following Modules:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Chrome Alloy Frameworks . . . . .	28
2	Gold Alloy Frameworks . . . . .	29
3	Wrought Wire Utilization . . . . .	30
4	Altered Cast Procedures . . . . .	31
5	Tooth Arrangement and Wax Contours for Removable Partial Denture Bases . . . . .	
6	Processing and Finishing Removable Partial Denture Bases . . . . .	33
7	Reline, Rebase or Repair Removable Partial Dentures . . . . .	34

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Removable Partial Dentures

MODULE 1. CHROME ALLOY FRAMEWORKS

**TASKS**

- a. Survey cast and design framework
- b. Block out and relieve master cast
- c. Duplicate cast in refractory investment
- d. Dehydrate and rosin/wax dip cast
- e. Transfer design to refractory cast
- f. Wax the pattern for the framework
- g. Sprue and invert the wax pattern
- h. Eliminate the wax by burnout
- i. Cast in chrome with either manual or Ticomatic machines
- j. Retrieve casting
- k. Sandblast casting
- l. Remove sprue, finish and polish casting using both high speed grinders and electrolytic deplater

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of a master cast and the work authorization

(Behavior) The DPA will fabricate a removable partial denture framework

(Conditions) With minimal supervision; using specialized techniques and equipment required for the chrome alloy

(Criteria) The completed framework must fit the master cast accurately and be constructed in accordance with the work authorization

(Consequence) A framework for removable partial dentures

(Next Action) Deliver the framework to the dentist for a try-in

**KNOWLEDGES AND SKILLS**

- Principles of surveying and component design for removable partial denture
- Characteristics and manipulation of dental materials and equipment used
- Classification of partially edentulous situations
- Physical and anatomic characteristics of the maxillary and mandibular hard and soft tissues

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Removable Partial Dentures

MODULE 2: GOLD ALLOY FRAMEWORKS

**TASKS**

- a. Prepare refractory cast suitable for gold alloy casting
- b. Wax pattern suitable for gold alloy framework
- c. Sprue and invest the pattern
- d. Eliminate wax by burnout
- e. Cast in gold alloy using gas-air blowpipe, e.g., Kerr
- f. Cast in gold alloy using electric machine, e.g., Thermatrol
- g. Clean casting with sandblaster
- h. Pickle casting
- i. Remove sprues, finish and polish casting
- j. Heat treat casting
- k. Complete the final polish

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of the master cast and dentist's work authorization

(Behavior) The DPA will fabricate a high-quality gold alloy partial denture framework

(Conditions) Without supervision; employing accepted procedures and techniques, and using standard laboratory equipment, instruments and materials

(Criteria) The framework must accurately fit the master cast

(Consequence) Preparation of a gold alloy partial denture framework

(Next Action) Return casting to dentist for try-in

**KNOWLEDGES AND SKILLS**

- Characteristics and manipulation of dental materials and equipment used
- Techniques used for gold alloy castings

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Removable Partial Dentures

MODULE 3: WROUGHT WIRE UTILIZATION

TASKS

- a. Bend wire for direct retainers
- b. Cast alloy to wrought wire
- c. Solder wrought wire to cast framework
- d. Attach wrought wire direct retainers to resin base

PERFORMANCE OBJECTIVE

(Stimulus) When so directed by the work authorization  
(Behavior) The DPA will form direct retainers from wrought wire and incorporate these into the partial denture by various methods  
(Conditions) Without supervision  
(Criteria) Accurately  
(Next Action) Complete the removable partial denture

KNOWLEDGES AND SKILLS

Principles of design of wrought wire retainers for removable partial dentures  
Procedures for contouring wrought wire direct retainers  
Procedures for attaching wrought wire direct retainers to framework and/or denture base  
Characteristics and manipulation of dental materials and equipment used

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Removable Partial Dentures

MODULE 4: ALTERED CAST PROCEDURES

**TASKS**

- a. Construct tray for altered cast impression
- b. Alter master cast

**PERFORMANCE OBJECTIVE**

**(Stimulus)** After the framework try-in and when so directed  
**(Behavior)** The DPA will fabricate an impression tray attached  
to the framework and suitable for a new registration  
of the edentulous areas; and upon receipt of the new  
impression from the dentist, will remove the original  
edentulous ridge areas of the master cast and repour  
an altered cast  
**(Conditions)** Without supervision  
**(Criteria)** The altered cast must be accurate, dense and duplicate  
the relationships provided by the impression  
**(Next Action)** Fabricate record bases and occlusion rims

**KNOWLEDGES AND SKILLS**

Procedures for constructing the altered cast  
impression tray on framework  
Procedures for removing and repouring the  
edentulous areas of the cast

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Removable Partial Dentures

MODULE 5: TOOTH ARRANGEMENT AND WAX CONTOURS FOR REMOVABLE  
PARTIAL DENTURE BASES

TASKS

- a. Fabricate pyroplast esthetic facings
- b. Arrange teeth
- c. Wax and contour the denture base

PERFORMANCE OBJECTIVE

(Stimulus) Following preparation of the removable partial denture casts

(Behavior) The DPA will fabricate pyroplast esthetic facings, esthetically and functionally arrange artificial denture teeth, and wax and naturally contour the denture base

(Conditions) Without supervision

(Criteria) Teeth must be arranged esthetically and functionally; the denture base must follow the natural contours of the patient's mouth

(Next Action) Return the denture to the dentist for patient try-in

KNOWLEDGES AND SKILLS

- Principles of functional occlusion for removable partial dentures
- Use of pyroplast for esthetic facings
- Characteristics and manipulation of dental materials and equipment used

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Removable Partial Dentures

MODULE 6: PROCESSING AND FINISHING REMOVABLE PARTIAL DENTURE BASES

TASKS

- a. Prepare cast and wax denture for flasking
- b. Flask partial denture
- c. Boil-out wax
- d. Prepare mold for packing
- e. Pack mold with acrylic resin
- f. Deflask and retrieve denture
- g. Finish and polish

PERFORMANCE OBJECTIVE

(Stimulus) Upon receipt of the trial partial denture  
(Behavior) The DPA will prepare the trial denture for

flasking, flask, boil-out, pack, process  
and retrieve the denture

(Conditions) Without supervision

(Criteria) The DPA will finish and polish the prosthesis in  
such a manner that it is ready for delivery to  
the patient and placement by the dentist

KNOWLEDGES AND SKILLS

Specialized flasking procedures required for  
partial dentures

Procedures for processing removable partial  
denture bases with compression molded resin

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Removable Partial Dentures

MODULE 7: RELINE, REBASE OR REPAIR REMOVABLE PARTIAL DENTURES

**TASKS**

- a. Reline, rebase or repair removable partial denture resin bases
- b. Replace broken direct retainers with wrought wire
- c. Replace broken direct retainers by casting new component and soldering it to framework
- d. Repair broken direct retainers by soldering or welding
- e. Make addition to framework

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of a partial denture requiring a reline, rebase or repair to the resin bases, teeth and/or metal framework

(Behavior) The DPA will accomplish such repair or alteration

(Conditions) Without supervision; using various methods and procedures

(Criteria) Rendering the denture intact and functional for use by the patient

(Consequence) A relined, rebased or repaired removable partial denture

**KNOWLEDGES AND SKILLS**

Methods of relining, rebasing and repairing

partial denture bases

Methods of repairing metal frameworks

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

COMPETENCY UNIT XI: FIXED PARTIAL DENTURE CONSTRUCTION

This unit includes the following Modules:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Construct Master Cast with Removable Dies . . .	36
2	Construct Patterns for Fixed Partial Dentures . . . . .	37
3	Spruing and Investing Procedures . . . . .	38
4	Wax Elimination and Casting Procedures . . . . .	39
5	Finishing and Polishing Castings . . . . .	40
6	Assembly and Soldering . . . . .	41
7	Resin Veneer Techniques . . . . .	42
8	Resin Jacket Crowns . . . . .	43
9	Temporary Crowns and Fixed Partial Dentures . .	44
10	Post and Core Techniques . . . . .	45
11	Preformed Facings . . . . .	46

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 1: CONSTRUCT MASTER CAST WITH REMOVABLE DIES

**TASKS**

- a. Prepare impression
- b. Construct master cast
- c. Trim master casts
- d. Articulate casts
- e. Separate individual dies
- f. Trim/ditch individual dies

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of the impression and a work authorization

(Behavior) The DPA will construct and articulate a master cast that has individual removable dies

(Conditions) With minimal supervision

(Criteria) The completed master cast and dies must accurately duplicate the impression of pertinent hard and soft tissues of the mouth

(Consequence) A master cast with individual removable dies

(Next Action) Wax the crown patterns

**KNOWLEDGES AND SKILLS**

- Principles and techniques of fixed partial denture fabrication
- Characteristics and manipulation of dental materials and equipment used
- Techniques used for construction of casts with removable tooth dies
- Recognition of the extent of the tooth preparations; procedures to carefully ditch dies without damage to critical areas
- Cast articulation techniques

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 2: CONSTRUCT PATTERNS FOR FIXED PARTIAL DENTURES

TASKS            a. Construct wax and/or resin patterns for casting

PERFORMANCE OBJECTIVE

(Stimulus)       Following preparation of the master casts  
(Behavior)       The DPA will form the patterns for the individual crowns and pontics  
(Conditions)      With minimal supervision  
(Criteria)        The resultant patterns must be smooth, nonlaminated, accurate and functional  
(Next Action)      Sprue the patterns

KNOWLEDGES AND SKILLS

Anatomic characteristics of each tooth  
Articulation of teeth in fixed partial denture situations  
Esthetic requirements of fixed partial dentures  
Dental anatomy and physiology related to fixed partial dentures  
Principles of design of fixed partial dentures

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 3: SPRUING AND INVESTING PROCEDURES

**TASKS**

- a. Attach single or multiple sprues
- b. Provide reservoirs, vents and heat sinks
- c. Prepare patterns and casting rings
- d. Invest pattern with vacuum or nonvacuum techniques
- e. Expand investment using hygroscopic techniques

**PERFORMANCE OBJECTIVE**

(Stimulus) After the patterns have been waxed to the exact form desired in the castings  
(Behavior) The DPA will prepare them for reproduction in metal by spruing and investing them in a refractory medium using various techniques and methods  
(Conditions) Without supervision  
(Consequence) Patterns ready for reproduction in metal  
(Next Action) Wax elimination and casting

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of dental materials and equipment used  
Techniques involved in spruing and investing

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 4: WAX ELIMINATION AND CASTING PROCEDURES

TASKS

- a. Remove crucible former base
- b. Eliminate wax
- c. Prepare casting machine
- d. Melt and cast metal
- e. Retrieve casting

PERFORMANCE OBJECTIVE

(Stimulus) When the investment has properly set  
(Behavior) The DPA will eliminate the wax, melt the metal, cast and retrieve the casting  
(Conditions) Without supervision  
(Criteria) The resultant casting must reproduce the accuracy of the pattern and be free of defects  
(Next Action) Finish and polish the casting

KNOWLEDGES AND SKILLS

- Characteristics and manipulation of dental materials and equipment used
- Techniques for high- and low-heat burnout of molds
- Procedures for each method of casting and equipment utilized

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 5: FINISHING AND POLISHING CASTINGS

TASKS	
	a. Pickle casting
	b. Sandblast casting
	c. Separate sprues from casting
	d. Reestablish normal tooth contacts in all excursions
	e. Finish casting
	f. Polish casting

PERFORMANCE OBJECTIVE

(Stimulus)	After recovery of the castings
(Behavior)	The DPA will finish and polish them
(Conditions)	Without supervision
(Criteria)	The castings must reproduce the form of the original patterns, accurately fit the dies and articulate correctly
(Next Action)	Assembly and soldering with or without patient try-in

KNOWLEDGES AND SKILLS

Techniques involved in finishing and polishing castings

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 6: ASSEMBLY AND SOLDERING

**TASKS**

- a. Assemble components of fixed partial denture
- b. Prepare matrix
- c. Invest castings for soldering
- d. Solder castings
- e. Finish and polish fixed partial denture

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon completion of the finishing and polishing sequence for the components

(Behavior) The DPA will assemble and solder them

(Conditions) Without supervision

(Criteria) The soldered restoration must accurately fit the cast

(Next Action) Application of resin veneers or delivery to dentist for patient try-in

**KNOWLEDGES AND SKILLS**

Techniques for assembly and soldering

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 7: RESIN VENEER TECHNIQUES

**TASKS**

- a. Prepare and opaque metal
- b. Apply acrylic resin (brush/sprinkle/pack)
- c. Process/bake acrylic resin
- d. Finish and polish prosthesis

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon completion of the metal try-in and return of the restoration together with a work authorization

(Behavior) The DPA will add the resin veneers

(Conditions) Without supervision; using one of various accepted techniques

(Criteria) The DPA must produce an esthetic veneer of maximum density conforming to the specified shades

(Next Action) Return the restoration to the dentist

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of dental materials and equipment used  
Colors, pigments and shading techniques for acrylic resin

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 8: RESIN JACKET CROWNS

**TASKS**

- a. Wax jacket crown pattern
- b. Flask jacket crown pattern
- c. Prepare mold for packing
- d. Pack and process jacket crown
- e. Deflask, finish and polish restoration

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of a master impression and dentist's work authorization

(Behavior) The DPA will wax and flask a resin jacket crown pattern and will pack, process, deflask, finish and polish the restoration

(Conditions) With minimal supervision

(Criteria) The resultant resin jacket crown must be esthetic and functional

(Next Action) Deliver the restoration to the dentist

**KNOWLEDGES AND SKILLS**

Procedures for resin jacket crown fabrication

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit:

Fixed Partial Denture Construction

MODULE 9: TEMPORARY CROWNS AND FIXED PARTIAL DENTURES

TASKS

a. Fabricate temporary crowns and fixed partial dentures

PERFORMANCE OBJECTIVE

(Stimulus)

Upon receipt of casts and the dentist's work authorization

(Behavior)

The DPA will fabricate the specified temporary crowns and fixed partial dentures using one of

(Conditions)

various accepted techniques

(Criteria)

Without supervision

(Next Action)

The resultant restoration must be esthetic and functional

KNOWLEDGES AND SKILLS

Deliver the restoration to the dentist

Principles involved in fabrication of temporary crowns and fixed partial dentures

Techniques for fabrication of temporary crowns and fixed partial dentures

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 10: POST AND CORE TECHNIQUES

**TASKS**

- a. Cast and finish direct post and core pattern
- b. Wax, invest, and cast indirect post and core pattern
- c. Wax, invest, cast and finish integral core and crown pattern

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of an impression or master cast and work authorization

(Behavior) The DPA will construct direct and/or indirect post and core restorations

(Conditions) With minimal supervision; using various accepted techniques

(Criteria) The DPA must produce an acceptable result

(Next Action) Return the restoration to the dentist for placement

**KNOWLEDGES AND SKILLS**

- Characteristics and manipulation of dental materials and equipment used
- Procedures for direct post and core
- Procedures for indirect post and core
- Procedures for integral crown and core

Competency: DENTAL PROSTHETIC ASSISTANT (DPA)

Unit: Fixed Partial Denture Construction

MODULE 11: PREFORMED FACINGS

**TASKS**

- a. Grind gingival or lingual of facing to conform to ridge or die contour
- b. Grind mesial, facial and interproximal of facing to harmonize with adjacent teeth
- c. Polish or glaze facing
- d. Wax backing (pontic or crown)
- e. Cast, recover and finish backing
- f. Assemble bridge or crown

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of an impression or mounted casts and the dentist's work authorization

(Behavior) The DPA will select, contour and finish specified type of preformed acrylic or porcelain facings for pontics and crowns

(Conditions) Without supervision

(Criteria) The DPA must construct a restoration that is functional and esthetic

(Next Action) Deliver the restoration to the dentist

**KNOWLEDGES AND SKILLS**

- Characteristics and manipulation of dental materials and equipment used
- Various types of preformed facings
- Various techniques for assembling preformed facings

DENTAL PROSTHETICS

TECHNICIAN

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

COMPETENCY UNIT I: FIXED PARTIAL DENTURE CONSTRUCTION

This unit includes the following Modules:

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1	Vacuum-Fused Porcelain to Metallic Alloy Restorations . . . . .	48
2	Porcelain Jacket Crowns. . . . .	49
3	Telescoping Crowns . . . . .	50

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Fixed Partial Denture Construction

MODULE 1: VACUUM-FUSED PROCELAINE TO METALLIC ALLOY RESTORATIONS

**TASKS**

- a. Prepare master casts
- b. Construct dies and trim
- c. Process dental models for articulation
- d. Mount final casts to adjustable articulator
- e. Fabricate wax pattern for metal coping, crown/fixed partial casting
- f. Construct metal copings
- g. Construct metal crown/fixed partial casting
- h. Grind/polish crown (metal casting)
- i. Prepare and opaque metal for porcelain
- j. Prepare/apply porcelain to metal casting
- k. Fire porcelain facings (veneers)
- l. Prepare/apply stain to porcelain facing (individual characterization)
- m. Prepare, apply and fire glaze to characterized restoration

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of the master impression and the dentist's work authorization

(Behavior) The DPT will construct master casts, construct the removable die, articulate the master casts, fabricate the wax patterns, cast the metal, finish and polish the metal casting, and apply and fire the opaque, body and incisal porcelains to the finished casting

(Conditions) With minimal supervision

(Criteria) The resultant restoration must be esthetic, accurate and functional

(Consequence) A vacuum-fused porcelain to metallic alloy restoration

(Next Action) Deliver the restoration to the dentist

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of the dental materials and equipment used  
Color, pigments and shading techniques for dental porcelain

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Fixed Partial Denture Construction

MODULE 2: PORCELAIN JACKET CROWNS

**TASKS**

- a. Prepare master casts with removable dies trimmed for porcelain jacket crowns
- b. Adapt platinum matrix
- c. Prepare, apply and fire opaque porcelain
- d. Prepare, apply and fire body and incisal porcelain
- e. Contour porcelain
- f. Stain and glaze porcelain
- g. Remove platinum matrix

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of a master impression and the dentist's work authorization

(Behavior) The DPT will prepare the master casts with removable dies suitable for fabrication of a porcelain jacket crown. He will adapt a platinum matrix and will prepare, apply and fire the opaque, body and incisal porcelain. He will contour, stain and glaze the porcelain and remove the platinum matrix

(Conditions) With minimal supervision

(Criteria) The resultant restoration must be esthetic and functional

(Consequence) Porcelain jacket crown fabrication

(Next Action) Deliver the restoration to the dentist

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of dental materials and equipment used  
Procedures for porcelain jacket crown fabrication

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Fixed Partial Denture Construction

MODULE 3: TELESCOPING CROWNS

**TASKS**

- a. Wax and parallel copings on surveyor
- b. Cast, recover, finish coping
- c. Wax overlay crown patterns
- d. Cast, recover, finish and assemble overlay fixed partial denture

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of an impression or mounted casts and the dentist's work authorization

(Behavior) The DPT will construct copings and fixed partial dentures on nonparallel abutment casts

(Conditions) With minimal supervision

(Criteria) The resulting fixed partial denture must be functional and esthetic

(Next Action) Return the copings and fixed partial denture to the dentist

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of dental materials and equipment used

Techniques for telescoping crowns; direct and indirect

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

COMPETENCY UNIT II: REMOVABLE PARTIAL DENTURES

This unit includes the following Modules:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Semiprecision Attachments . . . . .	52
2	Precision Attachments . . . . .	53
3	Fabricate Abutment Crowns for Removable Partial Dentures . . . . .	54

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Removable Partial Dentures

MODULE 1: SEMIPRECISION ATTACHMENTS

TASKS a. Fabricate semiprecision attachments

PERFORMANCE OBJECTIVE

(Stimulus) Upon receipt of casts and the dentist's work authorization

(Behavior) The DPT will fabricate a semiprecision attachment as a unit of a fixed or removable partial denture, utilizing any of various accepted techniques

(Conditions) With minimal supervision

(Criteria) The semiprecision attachment must be compatible with oral tissue structures, be esthetic, and fulfill functional requirements

(Consequence) Fabrication of specified semiprecision attachments

(Next Action) Deliver the attachments to the dentist

KNOWLEDGES AND SKILLS

Characteristics and manipulation of dental materials and equipment used  
Techniques and design of semiprecision attachment fabrication

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Removable Partial Dentures

MODULE 2: PRECISION ATTACHMENTS

TASKS a. Fabricate precision attachments

PERFORMANCE OBJECTIVE

(Stimulus) Upon receipt of casts and the dentist's work authorization

(Behavior) The DPT will fabricate a precision attachment as a unit of a fixed or removable partial denture, utilizing any of various accepted techniques

(Conditions) With minimal supervision

(Criteria) The precision attachment must be compatible with oral tissue structures, be esthetic and fulfill functional requirements

(Consequence) Fabrication of required precision attachments

(Next Action) Deliver the attachments to the dentist

KNOWLEDGES AND SKILLS

Characteristics and manipulation of dental materials and equipment used  
Fabrication procedures for various types of precision attachments

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Removable Partial Dentures

MODULE 3: FABRICATE ABUTMENT CROWNS FOR REMOVABLE PARTIAL DENTURES

**TASKS**

- a. Prepare cast for abutment crowns
- b. Wax the patterns
- c. Prepare guiding planes on the wax patterns
- d. Prepare occlusal, incisal or cingulum rests on the wax patterns
- e. Prepare lingual ledges or contour wax patterns to receive reciprocal retainer
- f. Locate desired undercuts for direct retainers
- g. Sprue, invest, burn-out, cast and finish abutment crowns
- h. Fabricate esthetic veneers
- i. Finish abutment crowns on dental surveyor

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of an impression or prepared casts and the dentist's work authorization

(Behavior) The DPT will fabricate abutment crowns for removable partial dentures

(Conditions) With minimal supervision

(Criteria) The finished crowns must be functional and esthetic, and meet the requirements for a removable partial denture abutment

(Consequence) Required abutment crowns for fixed partial dentures

(Next Action) Deliver the abutment crowns to the dentist

**KNOWLEDGES AND SKILLS**

Characteristics and manipulation of dental materials and equipment used  
Requirements of removable partial denture abutments including occlusal, incisal and cingulum rest design

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

COMPETENCY UNIT III: FABRICATE CORRECTIVE APPLIANCES FOR DEFECTS

This unit includes the following Modules:

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Fabricate Molds . . . . .	56
2	Fabricate Internal Prostheses . . . . .	57
3	Fabricate External Prostheses . . . . .	58
4	Modification/Characterization of External Prostheses . . . . .	59

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Corrective Appliances

MODULE 1: FABRICATE MOLDS

**TASKS**

- a. Prepare paraffin molds
- b. Fabricate metal mold for polyvinyl restorations
- c. Fabricate stone mold
- d. Construct molds of facial anatomy from impressions
- e. Construct molds for prototype
- f. Fabricate ear mold for hearing aid

**PERFORMANCE OBJECTIVE**

(Stimulus) Upon receipt of an impression or a working/master cast and the dentist's work authorization  
(Behavior) The DPT will construct a mold for the fabrication of the corrective prosthesis  
(Conditions) With minimal supervision  
(Criteria) The resultant mold must be accurate  
(Consequence) Fabrication of a mold for specified corrective prosthesis  
(Next Action) Fabricate corrective prosthesis

**KNOWLEDGES AND SKILLS**

- Procedures for boxing and pouring maxillofacial impressions
- Characteristics and manipulation of dental materials and equipment used
- Anatomic characteristics of head and neck

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Corrective Appliances

MODULE 2: FABRICATE INTERNAL PROSTHESES

**TASKS**

- a. Fabricate internal facial prostheses
- b. Fabricate ocular implants
- c. Fabricate ocular conformers
- d. Fabricate cleft palate prosthetic appliance
- e. Fabricate prosthetic aids used in radiotherapy
- f. Fabricate special cranial prosthesis
- g. Fabricate mandibular implants

**PERFORMANCE OBJECTIVE**

(Stimulus) After the mold is completed  
(Behavior) The DPT will fabricate/process an internal prosthesis  
(Conditions) With minimal supervision; using appropriate materials and equipment  
(Criteria) The resultant prosthesis must be accurate and functional  
(Consequence) Fabrication of the specified internal prosthesis  
(Next Action) Deliver to dentist's office for insertion/modification

**KNOWLEDGES AND SKILLS**

Procedures for constructing internal appliances  
Characteristics and manipulation of dental materials and equipment used

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Corrective Appliances

MODULE 3: FABRICATE EXTERNAL PROSTHESIS

**TASKS**

- a. Fabricate external facial restorations
- b. Fabricate custom ocular prosthesis
- c. Paint artificial eye using acrylic paints
- d. Fabricate nose prosthesis
- e. Fabricate ear prosthesis
- f. Fabricate plastic head caps
- g. Fabricate RTV silicone restoration of the orbit

**PERFORMANCE OBJECTIVE**

(Stimulus)	Upon completion of the mold
(Behavior)	The DPT will fabricate an external prosthesis
(Conditions)	With minimal supervision; using appropriate materials and equipment
(Criteria)	The resultant prosthesis must be accurate, functional and esthetic
(Consequence)	Fabrication of specified external prosthesis
(Next Action)	Deliver to dentist's office for insertion/ modification

**KNOWLEDGES AND SKILLS**

- Procedures for construction of external appliance
- Characteristics and manipulation of dental materials and equipment used
- Principles and application of the fundamentals of color

Competency: DENTAL PROSTHETIC TECHNICIAN (DPT)

Unit: Corrective Appliances

MODULE 4: MODIFICATION/CHARACTERIZATION OF EXTERNAL PROSTHESSES

**TASKS**

- a. Modify custom ocular prosthesis
- b. Extrinsically tint silicone prostheses

**PERFORMANCE OBJECTIVE**

(Stimulus) When the color/shade of the prosthesis does not match that of the patient

(Behavior) The DPT will modify the appliance

(Conditions) With supervision; employing various equipment, instruments and materials necessary to perform the procedure

(Criteria) Must accurately match the patient's skin tone/color/shade

(Consequence) Will produce an esthetically acceptable prosthesis

(Next Action) Deliver to dentist's office for insertion

**KNOWLEDGES AND SKILLS**

Procedures for modification/characterization of prostheses

Colors/combinations and pigments

Manual dexterity

Ability to perform detail procedures

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